

Cumulative Index 1986

Volume 13

March PERINATAL NUTRITION

June THE TINY BABY

September TERATOLOGY

December CRITICAL CARE IN OBSTETRICS

Note: Page number of article titles are in boldface type.

Abdomen, circumference, in evaluation of fetal growth, 20
malformations in thalidomide syndrome, 570
Abortion, septic, and disseminated intravascular coagulation, 712-713
Absorption deficiencies, 46-50
Acid-base homeostasis, in VVLBW infants, 385
Adult respiratory distress syndrome, and colloid osmotic pressure, 838-839
in septic shock, 748
Afterload, in invasive hemodynamic monitoring, 771-772
Agent Orange teratogenicity, 663
Alanine, 103
Albumin, in premature infants, 84, 130-131
Alcohol teratogenicity, 654-659
Alpha-ketoisocaproate, 100-101
Alpha-ketoisovalerate, 100-101
Amino acid(s), branched chain, 98-101
essential, 97-103
"ideal" intake of, 97
intake, assessment of methods, 95
nonessential, 100, 103-104
nonradioactively labeled, in protein flux studies, 93
requirements, in premature infants, 95-104
umbilical uptake of, by fetus, 96-07
Amino acid solution, 100, 104
metabolic effects of, 69-70
¹³C-amino acids, estimation of protein turnover, 129
¹⁵N-amino acids, in protein requirement studies, 125-127
Aminoglycosides, and premature kidney function, 394-395
C-amino peptide, in amniotic fluid, 16
Aminopterin teratogenicity, 660
Amnion, early rupture, and limb reduction defects, 582-585
Amnionitis, and outcome of 501- to 1000-gm newborns, 273, 281-282
Amniotic fluid, embolism, 801-811
clinical presentation, 807
coagulopathy, 806
diagnosis, 808
and disseminated intravascular coagulation, 714-716
experimental animal models, 802-804
historical considerations, 801-802
human data, 804-806
management protocol, 808-809

Amniotic fluid (*Continued*)
 embolism, treatment, 808
 volume, 21-22

Amylase deficiency, pancreatic, 49-50

Amylases, pancreatic, salivary, and mammary, 41

Analgesia, epidural, and antihypertensive therapy, 786-787

Androgen teratogenicity, 660

Animal models for teratogenicity of environmental agents, 610-611

Anorexia nervosa, maternal, total parenteral nutrition in, 68

Antepartum care, of sickle cell crisis, 858-862

Anthropometric measurements, in pediatric patient, 74
 in pregnancy, 64
 in premature infants, 79-83

Anticoagulation, with heparin, 728-731
 with warfarin, 731-732

Antimicrobial therapy, in septic shock, 748-749

Antineoplastic drugs, teratogenicity of, 659-660

Antithyroid drugs, teratogenicity of, 670

Aortic stenosis during pregnancy, 699-700

Apgar scores, and outcome of 501- to 1000-gm newborns, 277, 282

Arrhythmias, cardiac, and betamimetic therapy for preterm labor inhibition, 848-849
 in tiny, premature infants, 339-350
 bradycardia, 340-341
 bradycardia in, 347-348
 fetal arrhythmias, 345-347
 intraventricular conduction defects in, 343
 management of, 347
 mechanism and etiology of, 339
 premature atrial contractions, 341
 premature beats and tachycardias, 341
 premature ventricular contractions, 343
 supraventricular tachycardia, 341-343, 348
 ventricular tachycardia, 343, 349

Arteriography, pulmonary, in thromboembolic disease, 727-728

Aspirin teratogenicity, 673-674

Atrial contractions, premature, in tiny premature infant, 341

Attorney for plaintiff, 523-525

Bacterial endocarditis prophylaxis, in pregnancy, 702-703

Barotrauma, in bronchopulmonary dysplasia in tiny infant, 317

Basal energy expenditure, in pregnancy, 65

Beats, premature, and tachycardias, in tiny premature infant, 341

Beta-adrenergic agonists, and premature kidney, 390-391

Betamimetic therapy for preterm labor inhibition, 843-852
 cardiac arrhythmias, 848-849
 cerebral ischemia, 849-850
 circulatory system, 843
 hyperglycemia, 850
 hypotension, 850-851
 myocardial ischemia, 847-848
 pulmonary edema, 844-845
 renal function, 845-847

Bilirubin binding, effect of lipid emulsions, 147-149

Biochemical tests, in protein energy malnutrition, 83-84

Biometry, fetal, ultrasound diagnosis, 599-601

Biparietal diameter, fetal, 19-20

Birth defects, chronic disease morbidity, 546
 identification problems, 552-553
 case reports, 552
 etiologic studies, 552-553
 incidence trends, 546-550
 and infant mortality, 545-546

Years of Potential Life Lost, 545-546

Birth weight, distribution of, and VVLBW rate, 236-240
 and maternal age, 239
 and outcome of 501- to 1000-gm newborns, 280-281
 and prenatal care, 240

Blood, colloid osmotic pressure, normal values, 831-833

Blood flow, measurements, 23-24

Blood loss, in pregnancy, physiologic changes, 757

Blood pressure, and volume expansion in preeclampsia, 785
 in VVLBW infants, 330-333

Blood vessel malformations in thalidomide syndrome, 569-570

Body fluid compartments in VVLBW infants, 403-417
 data review, 405-416
 methodology of, 403-405

Bowel, normal, anatomic and functional development, 163-164
 short. See *Short bowel syndrome*.

Bradycardia, in tiny premature infant, 340-341

Bradycardia, in tiny premature infant, 347-348

Breast milk. See *Milk(s), human*.

Breast-feeding, decline in, 112
 historic perspectives, 111-112
 immunologic and host resistance factors, 112-113

of premature infant, 111-122
recent trends back to, 112

Breath hydrogen test, 45-46

Bronchodilators, in bronchopulmonary dysplasia, 321

Bronchopulmonary dysplasia in tiny infant, 293-294, 315-326
history and definition, 315-319
barotrauma, 317
developmental immaturity, 318
etiology of, 317
oxygen use, 317
predisposition to, 318-319
long-term outcome, 324
management of, 320-322
bronchodilators, 321
fluid management, 321-322
steroids, 321
supportive care, 322
ventilator, 320-321

nutrition in, 320

postdischarge management, 322-324

prevention or ameliorization of, 319-320

supportive care, 320

ventilatory and oxygen supplementation, 319-320

Caffeine teratogenicity, 674

Calcium, absorption, effect of carbohydrate intake on, 44
in human milk, 115
loss, in short bowel syndrome, 166
in parenteral nutrition of VVLBW infants, 430
and phosphate homeostasis, in VVLBW infants, 386-387

Calorimetry, portable indirect, in pregnancy, 64-65

Captopril, and premature kidney, 391

Carbohydrate(s), absorption, and gastrointestinal physiology, 38-42
colonic salvage of, in infancy, 42
digestion, 37-55
historical perspective on, 37-38
gastric emptying of, in newborn period, 38
in infant formulas, 42-44
intake, effect of, on calcium and electrolyte absorption, 44
malabsorption, clinical tests of, 45-46
in VVLBW infants, nutritional requirements, 436
in parenteral nutrition, 425-426

Carbon dioxide, transcutaneous measurements in VVLBW infants, 334

Carcinogenesis of in utero ionizing radiation, 617-643

Cardiac disease, structural, 695-703
bacterial endocarditis, prophylaxis for, 702-703
hemodynamic changes, 695-700
aortic stenosis, 699-700
mitral stenosis, 698-699
myocardial infarction, 702
pulmonary hypertension, 700-702

Cardiac function curves, in severe pre-eclampsia, 790

Cardiac output in preeclampsia, hypertension in, 792-793
and regional perfusion, 791-792
and systemic vascular resistance, 791
and volume expansion in preeclampsia, 785

Cardiovascular monitoring, and obstetrics, 776-777

Carnitine, in lipid catabolism, 142-144

Carnitine acyltransferase, 136

Catheterization of pulmonary artery, in severe pregnancy-induced hypertension, 787-788, 795-796

Cephalometry, 19-20

Cerebral ischemia, and betamimetic therapy for preterm labor inhibition, 849-850

Cholestasis, with parenteral nutrition in VVLBW infants, 430-431

Circulatory system, and betamimetic therapy for preterm labor inhibition, 843
malformations in thalidomide syndrome, 569-570
volume restoration of in hemorrhagic shock, 758-760

Clinical patterns of thalidomide syndrome, 556-558

Coagulation, disseminated intravascular, 705-717
diagnosis, 708-709
due to amniotic fluid embolus, 714-716
due to fetal death syndrome, 713-714
due to placental abruption, 711-712
due to preeclampsia, 710-711
due to septic abortion, 712-713
pathophysiology, 707
treatment, 709-710
lipid emulsion effects, 153

Coagulopathy, for amniotic fluid embolism, 806

Colloid osmotic pressure, in pregnancy, 827-842
calculation and measurement, 829-831
clinical applications, 836-839
adult respiratory distress syndrome, 838-839
and fluid therapy, 833-834, 837-838
pulmonary capillary wedge pressure gradient, 836-837
collection techniques, 831
definition of, 827-828
and mortality, 839-840

Colloid osmotic pressure (*Continued*)
 normal values in blood and interstitium,
 831-833
 in postpartum period, 834
 in pregnancy-induced hypertension, 835-
 836
 Starling's law, 828-829
 and tocolytic therapy, 835

Communication, in medicolegal cases, 513

Conduction defects, intraventricular, in tiny
 premature infant, 343

Cord prolapse, and outcome of 501- to 1000-
 gm newborns, 271, 281

Corticosteroids for lung maturation, in
 VVLBW fetus, 257-258

Cost of care of VVLBW infants, 463-478
 cost-benefit analysis, 474-475
 duration of hospitalization, 467-468
 economic considerations, 468-474
 methodology of study program, 465-466
 mortality and survival, 466-467
 program description, 464-465

Coumarin derivatives, teratogenicity of, 661

C-peptide, in macrosomic infants, 78
 in newborns with septicemia, 83-84

Cranial nerve malformations in thalidomide
 syndrome, 568-569

Creatinine, 3-methyl histidine, ratio in amniotic
 fluid, 15-16

Cyclophosphamide teratogenicity, 661-662

Cysteine, 102

Cystine aminopeptidase, 17

Death rates, epidemiologic study of, 235
 weight-specific, 240-242

Defendant in congenital malformation law-
 suits, 507-508, 522

Delivery, preterm, obstetric management
 of, 259-261

Delivery room management, of respiration
 in VVLBW infants, 286-288

Developmental immaturity, and broncho-
 pulmonary dysplasia in tiny infant, 318

Diabetic mothers, infants of, 77

Diet therapy, in short bowel syndrome, 168

Diethylstilbestrol teratogenicity, 662

Digestive enzymes, intestinal, development
 of, 164

Diphenylhydantoin teratogenicity, 662-663

Disaccharidase(s), activity in intestine, 46,
 47
 deficiencies, 48-49
 development of, in small intestine, 38-41

Disaccharide intolerance, secondary, 49

Dopamine, and premature kidney function,
 392-393

Doppler flow studies, principles of, 23

Down's syndrome, incidence trends, 550

Drug therapy, for hemorrhagic shock, 760-
 761

Ectopic tubal gestation, and limb reduction
 defects, 578-579

Education about human malformations, 501

Electrolyte absorption, carbohydrate effects,
 44

Embolism, amniotic fluid, and disseminated
 intravascular coagulation, 714-716
 See also *Amniotic fluid embolism*.

Embryo, and x-ray, microwave, and ultra-
 sound exposure, 615-648
 counseling pregnant woman exposed to
 radiation, 634-639
 exposure from radiation therapy, 639-640
 human radiation teratogenesis, 619-628
 microwave and ultrasound, 642-643
 oncogenic effect of prenatal radiation,
 628-634
 ovarian and uterine exposure to radiation,
 640-642

Energy utilization, "optimal," 145-146

Environmental agents, teratogenicity of,
 609-613
 animal testing, 610-611
 classification, 609-610
 drugs and chemicals, 649-687
 alcohol, 654-659
 aminopterin and methotrexate, 660
 androgens, 660
 antineoplastic drugs, 659-660
 coumarin derivatives, 661
 cyclophosphamide, 661-662
 diethylstilbestrol, 662
 diphenylhydantoin, 662-663
 herbicides: Agent Orange, 663
 lithium carbonate, 663-664
 mechanisms, 649-654
 methylmercury, 664
 nonprescription drugs and products,
 673-674
 oxazolidine-2,4-diones (trimethadione,
 paramethadione), 664-665
 polychlorinated biphenyls, 665-666
 preconception exposures to noninfectious
 agents, 675
 progestins (female sex hormones), 666-
 667
 radiation, 667-668
 substance abuse: street drugs, 668
 teratogenic conditions acting on hu-
 mans, 670-675
 tetracycline, 669
 thalidomide, 669-670
 thyroid:iodine deficiency, iodides, ra-
 dioiodine, anti-thyroid drugs, 670
 evaluation methods, 611-612

Epidemiology, of human malformations, 492-493
 teratogenicity of environmental agents, 611-612
 of very low and very very low birth weight infants, 233-250
 birth weight distribution and VVLBW rate, 236-240
 definition of terms, 233-235
 less than 500-gm births, 242-244
 measures of association, 235-236
 morbidity and long-term outcome, 245-246
 place of birth for VLBW infants, 244
 postneonatal mortality, 244-245
 prematurity prevention, and "nine by ninety," 246-248
 weight-specific death rates, 240-242

Estradiol, 14-15
 excretion, low, total parenteral nutrition in, 68-69

Ethical issues in caring for tiny infants, 479-486
 gnosis, 481-482
 individual and society, 484
 rejecting ethics of necessity, 482-484
 responsibility ethics, 485

Etiology, of birth defects, 550-552
 costs and difficulties of studies, 553
 exposure/case definitions, 552-553
 of congenital human malformations, 493-495, 508-509
 of fatty liver in pregnancy, 813-825
 of septic shock in obstetrics, 741-742

Expert witness, case study, 530-536
 in congenital malformation lawsuits, 508, 522-523, 529-538
 physician as, 522-523
 quality of testimony, 537-538
 responsibility failures, 536-537

Exposure risks in thalidomide syndrome, 556

Extrapulmonary complications in VVLBW infants, 294

Familial fetal growth heterogeneity, 13
 Family history, limb reduction defects, 576-577
 Fat, total body, assessment of, in premature infant, 81
 Fat emulsions, parenteral, risk in pregnancy, 69
 Fatty acids, essential, deficiency of, 144-145
 long-chain, in circulation, 134
 Fatty liver, acute, of pregnancy, 813-825
 clinical presentation, 819-821
 diagnostic tests, 820-821
 history, 819
 laboratory tests, 820
 physical examination, 819
 differential diagnosis, 817-818
 historical perspective, 813-814
 pathogenesis, 814-815
 pathology, 816-817
 pathophysiology, 815-816
 treatment, 821-823
 delivery, 821-822
 interdictive care, 822-823
 supportive care, 822

Female sex hormones, teratogenicity of, 666-667

Fetal death syndrome, and disseminated intravascular coagulation, 713-714

Fetus, arrhythmias in, 345-347
 biometry, ultrasound diagnosis, 599-601
 body composition, amino acid requirements, 95-96
 constraint, and limb reduction defects, 575-591
 family history, 576-577
 teratogenic history, 577-578
 uterine environments, 578-585
 and vascular disruption, 585-589
 distress, and outcome of 501- to 1000-gm newborns, 275, 282
 growth, 73-74
 assessment of, 3-35
 biochemical techniques for evaluating, 14-19
 clinical parameters for evaluating, 13-14
 epidemiologic evaluation of, 9-13
 maternal malnutrition and, 61-63
 quality of, neonatal assessment of, 75-78
 regulation of, in growth inhibition, 8
 retardation, risk factors for, total parenteral nutrition in, 68
 role of oxygen on, 191-196
 ultrasonography in evaluation of, 19-24
 nutrition of, methods for assessing, 80
 renal function in, 377-378
 structural defects, ultrasound diagnosis, 593-607
 absence of normally present structure, 593-596
 biometry abnormalities, 599-601
 dilatation behind obstruction, 598-599
 herniations through structural defects, 597-598
 motion abnormalities, 602
 presence of additional structure, 596-597
 and x-ray, microwave, and ultrasound exposure, 615-648
 counseling pregnant woman exposed to radiation, 634-639
 exposure from radiation therapy, 639-640
 human radiation teratogenesis, 619-628

Fetus (*Continued*)
 and x-ray, microwave and ultrasound, 642-643
 oncogenic effect of prenatal radiation, 628-634
 ovarian and uterine exposure to radiation, 640-642
 Fibrinogen scanning, in thromboembolic disease, 725
 Fluid management, in bronchopulmonary dysplasia in tiny infant, 321-322
 and colloid osmotic pressure, 833-834, 837-838
 Foam stability index, and phosphatidylglycerol, 18-19
 Foods for full-term infants, 92
 Formulas, infant, carbohydrate composition of, 42-44
 Fundal height, and fetal growth, 13-14
 Furosemide, and premature kidney function, 391-392

Gastrointestinal disorders, and outcome of 501- to 1000-gm newborns, 279, 283
 Glomerular filtration in VVLBW infants, 378-382
 Glucoamylase, development of, 41-42
 Glucose, excretion in VVLBW infants, 387-388
 metabolism, effect of lipid emulsions on, 147
 in pregnancy, 60
 Glucose-galactose malabsorption, primary, 46
 Glucose system, vs. lipid system, 145-146
 Glucose tolerance testing, 17-18
 Glutamate, 103
 Glutamin, 103
¹⁵N-glycine, in studies of protein requirements, 127-128
 Glycoprotein, pregnancy-specific beta, 17-18
 Glycosuria, in total parenteral nutrition, 67
 Growth, comparable to in utero, protein infusion for, 146
 embryonic-fetal, cell number and rate of mitosis, 4
 fetal. See *Fetus*.
 inhibition, nature and timing of, 5-9
 intrauterine, biometry of, 3-5
 dysfunction of, 3-5
 fetal hormone effects, 11, 12
 malformations in thalidomide syndrome, 567
 Growth curves, measurement of in pediatric patient, 74

Head circumference, abdominal circumference ratio, 20
 midarm circumference ratio, 76-78
 of premature infant, 75
 Head growth, in premature infant, 81
 Heart malformations in thalidomide syndrome, 569-570
 Heart rate, in VVLBW infants, 327-330
 Hemodynamics, invasive monitoring of, 765-779
 cardiovascular monitoring and obstetrics, 776-777
 clinical investigations, 777
 data collection, 768-769
 data interpretation, 769-772
 mixed venous blood analysis, 772-775
 pulmonary edema, heart or lung, 775-776
 technique, 765-769
 monitoring in severe pregnancy-induced hypertension, 781-799
 complicated versus uncomplicated severe preeclampsia, 781-783
 intravascular volume and hemodynamic stability, 783-787
 pulmonary artery catheterization, 787-788
 in severe preeclampsia, 788-792
 volume expansion, 792-796
 with structural cardiac disease, 695-700
 aortic stenosis, 699-700
 mitral stenosis, 698-699
 subsets in severe preeclampsia, 793-795
 in VVLBW infants, 327-338
 arterial blood pressure, 330-333
 M-mode echocardiogram, 334-337
 neonatal heart rate, 327-330
 transcutaneous oxygen and carbon dioxide measurements, 334
 Hemorrhage, intracranial and other sites, and outcome of 501- to 1000-gm newborns, 277-279, 282-283
 Hemorrhagic shock in obstetrics, 755-763
 causes of, 755-757
 placenta previa, 756
 placental abruption, 755-756
 uterine rupture, 756-757
 hypovolemic shock management, 757-762
 physiologic changes in preparation for blood loss, 757
 Hemostasis, changes in pregnancy, 722-723
 regulation in thromboembolic disease, 720-722
 Heparin, anticoagulation in thromboembolic disease, 728-731
 with intravenous lipid emulsions, 154
 Hepatic lipase, 136
 Herbicide teratogenicity, 663
 Histidine, 102-103

Hormones, fetal, and intrauterine growth, 11, 12

Host resistance factors, in breast-feeding, 112-113

Human malformations, problems of, 491-503

- education and miseducation, 501
- epidemiology, 492-493
- etiology of congenital malformations, 493-495
- prevention and treatment, 496-501
- teratogenesis mechanisms, 495-596

Human milk. See *Milk(s), human*.

Hyperglycemia, and betamimetic therapy for preterm labor inhibition, 850 in tiny infants, 359-371

- clinical implications of, 361-362
- definition of, 359-360
- etiological factors, 362-363
- incidence of, 360-361
- pathogenesis of, 364-368
- therapy for, 368-371

Hyperinsulinemia in pregnancy, 58

Hypernatremia in VVLBW infants, 385

Hyperplasia, growth, 4-5

Hypertension, pregnancy-induced, colloid osmotic pressure values, 835-836

- vasodilator effects, 784-785

See also *Hemodynamics, monitoring in severe pregnancy-induced hypertension*.

Hypertrophy, growth, 5

Hypoglycemia in tiny infants, 351-359

- clinical implications of, 355
- definition of, 352
- etiological factors, 353-355
- incidence of, 352-353
- pathogenesis of, 355-357
- therapy for, 357-359

Hypolactasia, adult-type, 48

Hypotremia in VVLBW infants, 384

Hypotension, and betamimetic therapy for preterm labor inhibition, 850-851

Hypovolemic shock. See *Hemorrhagic shock in obstetrics*.

Immune function, effect of lipid emulsions, 151-152

Immunologic factors, in breast-feeding, 112-113

Incidence of birth defects, 546-550

Indomethacin, and premature kidney function, 393

Infant Mortality Rate (IMR), definition of, 235

Infants less than 1000 grams. See *Very low birth weight infants*.

Infectious agents, teratogenicity of, 672-673

Inflammatory bowel disease, total parenteral nutrition in, 68

Information sources, in medicolegal cases, 513-514

Inotropic support, in septic shock, 747-748

Insulin growth factors, 60

Interstitial fluid, colloid osmotic pressure, normal values, 831-833

Intestinal adaptation, in short bowel syndrome, 167-168

Intralipid, 133-134

Intrapartum care, of sickle cell crisis, 863 of thromboembolic disease, 732-733

Intrauterine growth retardation (IUGR)m 3, 75-76

- antenatal management in, 24-25
- asymmetric, 7-8
- etiology of, 5-9
- and outcome of 501- to 1000-gm newborns, 271, 273-275, 281
- symmetric, 5-7

Intrauterine volume, 20-21

Intravenous therapy, with lipid emulsions, 133-162

Iodine deficiency, and teratogenesis, 670

Iron loss, in short bowel syndrome, 166

Isoleucine, 98-100

Kidney, and betamimetic therapy for preterm labor inhibition, 845-847

See also *Renal function*.

Labor, obstetric management of, in preterm delivery, 258-259

preterm inhibition. See *Betamimetic therapy*.

Laboratory aids, for sickle cell diagnosis, 857-858

Lactase deficiency, primary congenital, 48

Lactation, establishment and maintenance of, 115-118

Lactogen, human placental, 15

Lactose intolerance, severe familial, 48

Larynx malformations in thalidomide syndrome, 569

Law, and congenital malformations, 505-544

- expert witness, 529-538
- case studies, 530-536
- quality of testimony, 537-538
- responsibility failures, 536-537
- lawsuits, nature of, 516-529
 - attorney for plaintiff, 523-525
 - case histories, 517-520
 - defendant, 522
 - medical care and legal systems, 525-526
- patient as plaintiff, 520-522
- physician expert witness, 522-523
- recommendations, 527-529

Law (*Continued*)
 legal issues, 505-516
 classification of congenital malformations, 510-512
 defendant, 507
 etiology of congenital malformations, 508-509
 expert witness, 508
 information sources, 513-514
 legislation, 514-515
 medicolegal work-up, 512-513
 plaintiff, 507
 responsibility in negligence cases, 509-510
 sensitive period, oversimplification of, 509
 Lecithin-cholesterol acyltransferase (LCAT), 136-137
 in preterm infants, 144
 Legislation, and congenital malformations, 514-515
 Length measurements, in premature infants, 79-81
 Leucine, 98-101
 Limb reduction defects, 575-591
 family history, 576-577
 teratogenic history, 577-578
 uterine environments, 578-585
 amnion rupture, 582-585
 ectopic tubal gestation, 578-579
 structural anomalies, 579-582
 and vascular disruption, 585-589
 Limb and limb girdle malformations in thalidomide syndrome, 558-567
 Lipids, catabolism, role of carnitine, 142-144
 clearance, enzymes, cofactors, and sites of, 138
 in newborn infant, 137-139
 dosage, increasing, 139-141
 emulsions, and bilirubin binding, 147-149
 and coagulation and platelet function, 153
 and glucose metabolism, 147
 heparin administration with, 154
 and immune function, 151-152
 infusion rate for, 153-154
 intravenous administration of, 133-162
 and laboratory tests, 155-155
 lipid concentration for, 155
 monitoring during infusion of, 155
 and oxygenation, 150-151
 and pulmonary vasculature, 149-150
 soybean oil vs. safflower oil, 154-155
 metabolism, during pregnancy, 59
 in VVLBW infants, nutritional requirements, 436
 in parenteral nutrition, 426-430
 Lipid system, glucose system vs., 145-146
 Lipolytic activity, post heparin, 134-135
 Lipoprotein, triglyceride, intravascular vs. endothelial hydrolysis of, 142, 143
 Lipoprotein lipase, 135-136
 Lithium carbonate teratogenicity, 663-664
 Liver disease, total parenteral nutrition in, 172
 Liver dysfunction, and parenteral nutrition, 197-212
 Low birth weight, United States rate, 236-237
 Lung, compliance in VVLBW infants, 306-307
 malformations in thalidomide syndrome, 569
 maturation, in very low birth weight fetus, 257-258
 in VVLBW infants, 285-286
 resistance in VVLBW infants, 307
 scanning, in thromboembolic disease, 727
 Lysine, 101
 Macrosomic newborns, 75-78
 Magnesium loss, in short bowel syndrome, 166
 Malformations, congenital, frequency of, 545-554
 birth defects and infant mortality, 545-546
 Down's syndrome, 550
 etiology, 550-552
 exposure/case definitions, 552-553
 identification of human birth defects, 552-553
 incidence, 546
 neural tube defects, 550
 trends in incidence, 546-550
 and the law, 505-544
 expert witness, 529-538
 case studies, 530-536
 failures of responsibility, 536-537
 quality of testimony, 537-538
 lawsuit types, 516-529
 attorney for plaintiff, 523-525
 case histories, 517-520
 defendant, 522
 medical care and legal systems, 525-526
 patient as plaintiff, 520-522
 physician expert witness, 522-523
 recommendations, 527-529
 legal issues in teratology, 505-516
 classification of congenital malformations, 510-512
 defendant, 507-508
 etiology of congenital malformations, 508-509
 expert testimony, 508
 information sources, 513-514

legislation, 514-515
 medicolegal work-up, 512-513
 plaintiff, 507
 prevention of medicolegal problems, 513-515
 responsibility in negligence cases, 509-510
 sensitive period, oversimplification of, 509
 in thalidomide syndrome, 558-570
 abdomen, 570
 growth, 567
 heart, circulation, and blood vessels, 569-570
 internal organs, 569
 limbs and limb girdle, 558-567
 skull and teeth, 568
 special senses and cranial nerves, 568-569
 spine, 567
 thalidomide-type, 570-572
 ultrasound diagnosis *in utero*, 593-607
 absence of normally present structure, 593-596
 dilatation behind obstruction, 598-599
 fetal biometry, 599-601
 fetal motion abnormalities, 602
 herniations through structural defects, 597-598
 presence of additional structure, 596-597
 See also *Human malformations*.
 Malnutrition, maternal, and fetal outcome, 61-63
 problems associated with, 57
 protein energy, 78-79
 biochemical tests in, 83-84
 Maternal conditions, and teratogenesis, 671-672
 Maternal risk factors, and fetal growth, 14
 Medical care, and legal system, 525-526
 Medicolegal work-up, 512-513
 Metabolic bone disease, in VVLBW infants, 437-438
 Metabolism, maternal, normal, 58-59
 Methionine, 102
 Methotrexate teratogenicity, 660
 3-Methyl histidine, in assessment of protein degradation and nitrogen balance, 93
 creatinine, ratio, in amniotic fluid, 15-16
 Methylmercury teratogenicity, 664
 Microwave effects on embryo and fetus, 615-648
 teratogenic and carcinogenic effects, 642-643
 Midarm circumference, head circumference ratio, 76-78
 in premature infants, 81, 82
 Milk(s), human, analysis of composition of, 95
 banked, 111
 cellular components, 113
 composition of, variability, 114
 contaminants and toxins in, 117-118
 ejection of, 116
 for neonates, 92
 fortifiers, 115
 immunologic factors in, 112-113
 nutritional adequacy, for premature infants, 113-115
 for VVLBW infants, 436-438
 Mitral stenosis, during pregnancy, 698-699
 M-mode echocardiogram, 334-337
 Monosaccharide, acquired intolerance for, 46
 transport defects, 42, 46
 Morbidity, and long-term outcome, 245-246
 Mortality rates, and birth defects, 545-546
 and colloid osmotic pressure values, 839-840
 of VVLBW infants, literature survey, 453
 perinatal, 270
 postneonatal rates, 244-245
 survey of centers, 454-457
 Motion, fetal, ultrasound diagnosis, 602
 Myocardial infarction, in pregnancy, 702
 Myocardial ischemia, and betamimetic therapy for preterm labor inhibition, 847-848
 Negligence cases, responsibility in, 509-510
 Neonatal Mortality Rate (NMR), definition of, 235
 race and weight-specific rates, 240-241
 of very very low birth weight infants, 241-242
 Neonate(s), full term, optimal food for, 92
 growth-retarded, 75-76
 large for gestational age, 77
 lipid clearance in, 137-139
 macrosomic, 76-78
 malnourished, symptoms of, 74
 nutritional assessment of, 73-89
 optimal nutrition for, 91
 premature, breast-feeding of, 111-122
 fallacy of normal fetal growth in, 13
 growth in, longitudinal assessment of, 78
 postnatal growth of, 74-75
 small for gestational age, 9, 10, 75-76
 Neural tube defects, 550
 Newborns. See *Neonates*.
 Nicotine teratogenicity, 674
 Nitrogen, accumulation in newborn, 123
 balance, in premature infants, 92-93
 positive, promotion of, 145
 technique of, 124-125
 in human milk, 115
 losses, 92

Nitrogen (*Continued*)
 requirement for growth, 125
 sources, for parenteral nutrition, 91-109
¹⁵N methods in protein requirements studies, 128
 Noninfectious agents, preconception exposure to, 675
 Nonprescription drugs and products, teratogenicity of, 673-674
 Nutrition, assessment of, in pregnancy, 63-65
 enteral, in pregnancy, 65
 fetal, methods for assessing, 80
 maternal, normal, 58-59
 optimal, for neonate, 91
 parenteral, and liver dysfunction, 91-109, 197-212
 placental role in, 59-61
 total parenteral. See *Total parenteral nutrition*.
 in VVLBW infants, 419-443
 in bronchopulmonary dysplasia, 320
 enteral nutrition, 431-432
 goals of, 419-420
 metabolic bone disease, 437-438
 nutritional requirements, 432-438
 carbohydrates, 436
 fat, 436
 human milk, 436-438
 protein, 433-435
 vitamins and trace metals, 438
 parenteral nutrition, 420-431
 calcium and phosphorus, 430
 carbohydrate, 425-426
 cholestasis, 430-431
 goals, 422
 lipid, 426-430
 protein, 422-425
 vitamins and trace minerals, 430
 Nutritional assessment of neonate, 73-89
 Nutritional intake, measurement, 85
 Nutritional status, assessment, 85

Obstetric care, amniotic fluid embolism, 801-811
 clinical presentation, 807
 coagulopathy, 806
 diagnosis, 808
 experimental models, 802-804
 historical considerations, 801-802
 human data, 804-806
 management protocol, 808-809
 treatment, 808
 betamimetic therapy for preterm labor inhibition, 843-852
 cardiac arrhythmias, 848-849
 cerebral ischemia, 849-850
 circulatory system, 843
 hyperglycemia, 850
 hypotension, 850-851
 myocardial ischemia, 847-848
 pulmonary edema, 844-845
 renal function, 845-847
 cardiac disease, structural, 695-703
 hemodynamic changes, 695-700
 myocardial infarction, 702
 prophylaxis for bacterial endocarditis, 702-703
 pulmonary hypertension, 700-702
 colloid osmotic pressure, use of in pregnancy, 827-842
 calculation and measurement, 829-831
 clinical applications, 836-839
 collection techniques, 831
 definition of, 827-828
 and fluid therapy, 833-834
 mortality, 839-840
 normal values in blood and interstitium, 831-833
 in postpartum period, 834
 in pregnancy-induced hypertension, 835-836
 Starling's law, 828-829
 and tocolytic therapy, 835
 for disseminated intravascular coagulation, 705-717
 amniotic fluid embolus, 714-716
 diagnosis, 708-709
 fetal death syndrome, 713-714
 pathophysiology, 707
 placental abruption, 711-712
 preeclampsia, 710-711
 septic abortion, 712-713
 treatment, 709-710
 fatty liver of pregnancy, 813-825
 clinical presentation, 819-821
 differential diagnosis, 817-818
 historical perspective, 813-814
 pathogenesis, 814-815
 pathology, 816-817
 pathophysiology, 815-816
 treatment, 821-823
 hemodynamic monitoring in severe hypertension, 781-799
 complicated versus uncomplicated severe preeclampsia, 781-783
 epidural analgesia and antihypertensive therapy, 786-787
 intravascular volume and hemodynamic stability, 783-787
 oliguria, 782
 preeclampsia, uncomplicated, 782-783
 pulmonary artery catheterization, 787-788
 pulmonary edema, 781-782
 severe preeclampsia, 788-792
 vasodilators, 784-786
 volume expansion, 785, 792-796
 volume manipulation, 784

hemorrhagic shock, 755-763
 causes of, 755-757
 hypovolemic shock management, 757-762
 physiologic changes in preparation for blood loss, 757
 invasive hemodynamic monitoring, 765-779
 cardiovascular monitoring and obstetrics, 776-777
 clinical investigations, 777
 data collection, 768-769
 data interpretation, 769-772
 mixed venous blood analysis, 772-775
 pulmonary edema, 775-776
 technique, 765-769
 issue on, 695-686
 septic shock, 741-754
 adult respiratory distress syndrome, 748
 antimicrobial therapy, 748-749
 clinical manifestations, 745-746
 controversial treatment modalities, 751-752
 etiology, 741-742
 management of, 746-751
 pathophysiology, 742-744
 surgical treatment, 749
 sickle cell crisis, 853-868
 clinical presentation, 853-854
 differential diagnosis, 857-858
 management, 858-864
 new developments, 864
 pathophysiology, 854-856
 and thromboembolic disease, 719-739
 adjunctive measures and symptomatic treatment, 734
 diagnosis of deep venous thrombosis, 723
 diagnosis of pulmonary thromboembolism, 726
 hemostasis changes, 722-723
 hemostasis regulation, 720-722
 heparin anticoagulation, 728-731
 ^{125}I fibrinogen scanning, 725
 incidence, 719
 intrapartum and postpartum considerations, 732-733
 lung scanning, 727
 noninvasive examinations, 724-725
 pulmonary arteriography, 727-728
 surgical intervention, 734
 thromboembolism, prophylaxis of, 734-735
 thrombolytic therapy, 733-734
 venography, 723-724
 warfarin anticoagulation, 731-732
 and very low birth weight fetus, 251-265
 lung maturation, 257-258
 corticosteroid use, 257-258
 thyroid hormone effects, 258

preterm delivery, 258-261
 delivery management, 259-261
 labor management, 258-259
 premature twin gestation, 261
 tocolysis in preterm labor, 252-257

Odds Ratio, 235

Oliguria, in severe preeclampsia, 782

Outcome of VVLBW infants, 451-459
 morbidity rates, 245-246

Ovary, and diagnostic or therapeutic radiation, 640-642

Oxazolidine-2,4-diones (trimethadione, paramethadione), teratogenicity of, 664-665

Oxygen, in bronchopulmonary dysplasia in tiny infant, 317
 and fetal growth, 191-196
 in hemorrhagic shock, 758
 and lipid emulsions, 150-151
 transcutaneous measurements in VVLBW infants, 334

Oxytocin, in lactation, 116-117

Oxytocinase, 17

Pancreatic amylase deficiency, 49-50

Parenteral nutrition, nitrogen sources for, 91-109

Patent ductus arteriosus, and assisted ventilation in VVLBW infants, 291-292

Patient as plaintiff, 520-522

Perinatal factors for 501- to 1000-gm newborns, 267-284
 birth weight, 280-281
 fetal deaths versus neonatal survivors, 271-273
 amnionitis, 273, 281-282
 cord prolapse, 271, 281
 intrauterine growth retardation, 271
 presentation, 271
 mortality, 270
 neonatal deaths versus neonatal survivors, 273-276
 fetal distress, 275, 282
 intrauterine growth retardation, 273-275, 281
 pre-eclampsia, 273, 282
 presentation and mode of delivery, 275-276, 281

neonatal factors and neonatal survivors, 276-279
 Apgar scores, 277, 282
 gastrointestinal disorders, 279, 283
 hemorrhage, intracranial and other, 277-279, 282-283

RDS/HMD, 277, 282

renal failure, 279, 283
 seizures, 277, 283

Perinatal factors for 501- to 1000-gm newborns (*Continued*)
University of Illinois Perinatal Data Collection System, 268
data collection, 268-270
statistical analysis, 270

Perinatal mortality rate (PMR), 235

Phenylalanine, 102

Phi coefficient, 235

Philadelphia growth curve, 9, 10

Phosphatidylglycerol, and foam stability index, 18-19

Phosphorus levels, in human milk, 115
in parenteral nutrition, 430
in VVLBW infants, 386-387

Physician as expert witness, 522-523

Placenta, abruption, and disseminated intravascular coagulation, 711-712
in hemorrhagic shock, 755-756
previa, in hemorrhagic shock, 756
role in nutrition, 59-61

Placental grading, 22

Plaintiff, attorney for, 523-525
in congenital malformation lawsuits, 507
patient as, 520-522

Plasma proteins, as indicators of protein energy nutrition, 94-95

Platelet function, effect of lipid emulsions on, 153

Pneumotachography in VVLBW infants, 303-306
airflow, 306
airway pressure, 305
esophageal pressure, 304-305
instrumentation, 303-304
volume, 306

Pneumothorax in VVLBW infants, 292-293

Polychlorinated biphenyl teratogenicity, 665-666

Ponderal index(ices), applications of, 82-83
intruterine, 22-23

Postheparin lipolytic activity (PHLA), 134-135

Postneonatal mortality rate (PNMR), 235

Postpartum care, and colloid osmotic pressure values, 834
of sick cell crisis, 864
of thromboembolic disease, 732-733

Potassium excretion, in VVLBW infants, 387

Prealbumin, as indicator of protein synthesis, 94
in newborns with septicemia, 83-84

Preeclampsia, and disseminated intravascular coagulation, 710-711
and outcome of 501- to 1000-gm newborns, 273, 282
plasma volume in, 785
and pulmonary edema, 781-782
severe, hemodynamic measurement, 788-792

cardiac function curves, 790
cardiac output and systemic vascular resistance, 791
central venous pressure and pulmonary capillary wedge pressure, 788-790

regional perfusion associated with "high" cardiac output, 793

hemodynamic subsets, 793-795
high cardiac output hypertension, 792-793

and severe oliguria, 782
uncomplicated, hemodynamic monitoring, 782-783

uncomplicated severe, and pulmonary artery catheterization, 795-796

vasodilator treatment, 786

volume expansion, 785, 792-796

Pregnancy, blood loss, physiologic changes in preparation for, 757
normal nutrition and metabolism during, 58-59

outcome, effects of maternal malnutrition on, 61-63

ovarian and uterine exposure to diagnostic or therapeutic radiation, 640-642

pulmonary capillary wedge pressure, normal values, 789

radiation effects, 634-649

total parenteral nutrition during, 57-72
clinical experience with, 67-70

See also *Obstetric care*.

Preload, in invasive hemodynamic monitoring, 769-771

Prematurity prevention, and "nine by ninety," 246-248

Presentation and mode of delivery, and outcome of 501- to 1000-gm newborns, 271, 275-276, 281

Pressure, in severe pregnancy-induced hypertension central venous, 787-789
pulmonary capillary wedge, 787-790

See also *Colloid osmotic pressure*.

Progesterin teratogenicity, 666-667

Prolactin, in lactation, 115-116

Prophylaxis of thromboembolism, 734-735

Prostaglandins, and premature kidney function, 394

Protein(s), excess, adverse consequences of, 123-124
in human milk, 114-115
nutritional requirements of VVLBW infants, 433-435

in parenteral nutrition of VVLBW infants, 422-425

plasma, as indicators of protein energy nutrition, 94-95

pregnancy-associated plasma, 17-18

requirements, estimation from balance studies, 124-125

in neonates, 91-95
in pregnancy, 59
methods for determining, 123-132
serum, determination of, 130-131
therapy, in short bowel syndrome, 168
turnover, estimation of, with ¹³C-amino acids, 129

Protein energy malnutrition, 78-79
biochemical tests in, 83-84

Pulmonary arteriography, in thromboembolic disease, 727-728

Pulmonary artery catheterization. See *Catheterization*.

Pulmonary capillary wedge pressure, and colloid osmotic pressure, 836-837
in pregnancy-induced hypertension, 787-790

Pulmonary edema, and betamimetic therapy for preterm labor inhibition, 844-845
invasive hemodynamic monitoring, 775-776
in severe preeclampsia, 781-782

Pulmonary function in VVLBW infants, 299-313
current methods of assessment, 308-311
future considerations, 311
lung compliance, 306-307
lung resistance, 307
past methods of assessment, 300-303
pneumotachography, 303-306
airflow, 306
airway pressure, 305
esophageal pressure, 304-305
instrumentation, 303-304
volume, 306

Pulmonary hypertension, during pregnancy, 700-702

Pulmonary interstitial emphysema, in VVLBW infants, 292-293

Pulmonary thromboembolism, diagnosis of, 726

Pulmonary vasculature, lipid emulsion effects, 149-150

Pulsatility index, 23-24

Race, and weight-specific death rates, 240-241

Radiation, ionizing, teratogenic and carcinogenic effects, 617-643, 667-668

Radioiodine teratogenicity, 670

RDS/HMD, and outcome of 501- to 1000-gm newborns, 277, 282

Renal function in VVLBW infants, 377-401
acid-base homeostasis, 385
aminoglycoside effects, 394-395
and artificial ventilation, 389-390
calcium and phosphate homeostasis, 386-387

and drugs given to mother, 390-391
and drugs given to neonate, 391-394
electrolyte and solute excretion, 387-388
glomerular filtration development, and renal perfusion, 378-382
intrauterine maturation, 377-378
and outcome of 501- to 1000-gm newborns, 279, 283
during respiratory distress syndrome, 388-389
syndrome of inappropriate antidiuretic hormone secretion, 390
water and sodium balance, 382-385
 hypernatremia, 385
 hyponatremia, 384

Respiratory distress syndrome, and outcome of 501- to 1000-gm newborns, 277, 282
and renal function in VVLBW infants, 388-389

Resuscitation and respiratory management of VVLBW infants, 285-297
assisted ventilation, 288-293
 monitoring during, 289-291
 problems during, 291-293

bronchopulmonary dysplasia, 293-294

delivery room management, 286-288

extrapulmonary complications, 294

lung development, 285-286

 surfactant therapy, 294-295

Retinol-binding protein, 94-95

Safflower oil lipid emulsions, 154-155

Schwangerschaft's protein I, 17-18

Seizures, neonatal, and outcome of 501- to 1000-gm newborns, 277, 283

Septic shock in obstetrics, 741-754
 clinical manifestations, 745-746
 controversial treatment modalities, 751-752
 etiology, 741-742
 management of, 746-751
 adult respiratory distress syndrome, 748
 antimicrobial therapy, 748-749
 general treatment measures, 749-751
 inotropic support, 747-748
 intravascular volume correction, 747
 surgical treatment, 749
 pathophysiology, 742-744

Shock. See *Hemorrhagic shock; Septic shock*.

Short bowel syndrome, 163-173
 anatomic and operative management options in, 169-170
 etiology of, 164-165
 intestinal adaptation in, 167-168
 management plan for, 170-171
 nutritional and medical management of, 168-169
 outcome of, 171-172
 pathophysiology of, 165-167

Sickle cell crisis in pregnancy, 853-868
 clinical presentation, 853-854
 differential diagnosis, 857-858
 laboratory aids, 857-858
 therapeutic measures, 858
 management, 858-864
 antenpartum care, 858-862
 intrapartum care, 863
 postpartum care, 864
 new developments, 864
 pathophysiology, 854-856

Skull and teeth malformations in thalidomide syndrome, 568

Small for gestational age infants, 9, 10, 75-76

Small intestine, development of disaccharides in, 38-41

sarcoma of, total parenteral nutrition in, 68

Smoking, and growth-retarding mechanisms, 8-9
 and teratogenesis, 674

Sodium and water balance, in VVLBW infants, 382-385

Soybean oil lipid emulsions, 154-155

Special senses, malformations in thalidomide syndrome, 568-569

Spine malformations in thalidomide syndrome, 567

Stable isotope techniques, evaluation of, 129-130
 protein requirement and, 125-131

Starling's law, 828-829

Starvation, maternal, 671

Steroids, in bronchopulmonary dysplasia in tiny infants, 321

Substance abuse: street drugs, teratogenicity of, 668

Sucrase-isomaltase deficiency, congenital, 48-49

Sudden infant death syndrome, 3

Surfactant therapy in VVLBW infants, 294-295

Surgery, problems and outcome in VVLBW infants, 445-451
 in septic shock, 749
 for thromboembolic disease, 734

Syndrome of inappropriate antidiuretic hormone secretion, 390

Tachycardia in tiny premature infant, and premature beats, 341
 supraventricular, 341-343, 348
 ventricular, 343, 349

Taurine, 103

Teratogenesis, alcohol, 654-659
 aminopterin, 660
 androgens, 660

antineoplastic drugs, 659-660

aspirin, 673-674

caffeine, 674

coumarin derivatives, 661

cyclophosphamide, 661-662

diethylstilbestrol, 662

diphenylhydantoin, 662-663

herbicides: Agent Orange, 663

infectious agents, 672-673

limb reduction defects, 577-578

lithium carbonate, 663-664

maternal conditions, 671-672

maternal starvation, 671

mechanical problems, 670-671

mechanisms of, 495-496, 649-654

methotrexate, 660

methylmercury, 664

oxazolidine-2,4-diones (trimethadione, paramethadione), 664-665

polychlorinated biphenyls, 665-666

progestins (female sex hormones), 666-667

radiation, 667-668

smoking and nicotine, 674

substance abuse: street drugs, 668

tetracycline, 669

thalidomide, 669-670

thyroid: iodine deficiency, iodides, radioiodine, anti-thyroid drugs, 670

vitamins, 674

Teratology, of environmental agents, 609-613
 animal testing, 610-611
 classification, 609-610
 evaluation methods, 611-612

issue on, 491-497

legal issues, 505-516
 classification of congenital malformations, 510-512
 communication aspects, 513
 defendant, 507-508
 etiology of congenital malformations, 508-509
 expert witness, 508
 information sources, 513-514
 legislation, 514-515
 medicolegal work-up, 512-513
 plaintiff, 507
 responsibility in negligence cases, 509-510
 sensitive period, oversimplification of, 509

Terminology in thalidomide syndrome, 555-556

Tetracycline teratogenicity, 669

Thalidomide syndrome, 555-573
 clinical patterns, 556-558
 exposure risks, 556
 malformation types, 558-570
 abdomen, 570

growth, 567
 heart, circulation, and blood vessels, 569-570
 internal abnormalities, 569
 limbs and limb girdle, 558-567
 skull and teeth, 568
 special senses and cranial nerves, 568-569
 spine, 567
 terminology, 555-556
 thalidomide-type deformities, 570-572
 Thalidomide teratogenicity, 669-670
 Threonine, 101
 Thromboembolic disease in pregnancy, 719-739
 adjunctive measures and symptomatic treatment, 734
 diagnosis of deep venous thrombosis, 723
 hemostasis changes, 722-723
 hemostasis regulation, 720-722
 heparin anticoagulation, 728-731
¹²⁵I fibrinogen scanning, 725
 incidence, 719
 intrapartum and postpartum considerations, 732-733
 lung scanning, 727
 noninvasive examinations, 724-725
 prophylaxis of thromboembolism, 734-735
 pulmonary arteriography, 727-728
 pulmonary thromboembolism, diagnosis of, 726
 surgical intervention, 734
 thrombolytic therapy, 733-734
 venography, 723-724
 warfarin anticoagulation, 731-732
 Thrombolytic therapy, for thromboembolic disease, 733-734
 Thrombosis, deep venous, diagnosis of, 723
 Thyroid hormone, role in lung maturation, 258
 teratogenicity, 670
 Time-dependent formula, 3-4
 Tocolytic therapy, and colloid osmotic pressure, 835
 in preterm labor, 252-257
 Tolazoline, and premature kidney function, 393-394
 Total parenteral nutrition, advantages of, 66 and home care, 213-226
 complications of, 67, 69
 diseases treated with, 66
 liver disease associated with, 172
 during pregnancy, 57-72
 clinical experiences with, 67-70
 for premature newborn, 66
 in short bowel syndrome, 169-171
 techniques of, 67
 Trace element deficiencies, in short bowel syndrome, 166, 168-169
 Transport deficiencies, 46-50

Trehalase deficiency, 48
 Triceps skinfold thickness, 78
 of premature infants, 81-82
 Triglyceride, hydrolysis and clearance of, from circulation, 134-137
 lipoprotein, intravascular vs. endothelial hydrolysis of, 142, 143
 Tryptophan, 101-102
 Twin gestation, premature, delivery management of, 261
 Tyrosine, 102

Ultrasound, embryonic and fetal exposure to, 615-648
 teratogenic and carcinogenic effects, 642-643
 in evaluation of fetal growth, 19-24
in utero diagnosis of congenital malformation, 593-607
 absence of normally present structure, 593-596
 dilation behind obstruction, 598-599
 fetal biometry, 599-601
 fetal motion abnormalities, 602
 presence of additional structure, 596-597
 University of Illinois Perinatal Data Collection System, 268-270
 Uric acid excretion, in VVLBW infants, 387
 Urine production, fetal, 22
 Uterus, and diagnostic or therapeutic radiation, 640-642
 and limb reduction defects, 578-585
 amnion premature rupture, 582-585
 ectopic tubal gestation, 578-579
 structural anomalies, 579-582
 rupture of, and hemorrhagic shock, 756-757
 See also *Ultrasound*.

Valine, 98
 Vascular disruption, and limb reduction defects, 585-589
 Vasodilators, in hypertension, 784-785
 in severe preeclampsia, 786
 Venography, for thromboembolic disease, 723-724
 Ventilation, assisted, in VVLBW infants, 288-293
 monitoring during, 288-291
 problems during, 291-293
 and renal function, 389-390
 Ventilator and oxygen supplementation, in bronchopulmonary dysplasia, 319-321
 Ventricular contractions, premature, in tiny premature infant, 343

Very low birth weight infants, arrhythmias
in, 339-350
bradycardia, 347-348
fetal arrhythmias, 345-347
intraventricular conduction defects, 343
management of, 347
mechanism and etiology, 339
premature atrial contractions, 341
premature beats and tachycardias, 341
premature ventricular contractions, 343
supraventricular tachycardia, 341-343
supraventricular tachycardia, 348
ventricular tachycardia, 343
ventricular tachycardia, 349
epidemiologic study of, 233-250
frequency of, 237-238
obstetric management of, 251-265
 delivery, 259-261
 labor, 258-259
 lung maturation, 257-258
 premature twin gestation, 261
 tocolysis in preterm labor, 252-257
perinatal factors influencing outcome,
 267-284
 University of Illinois Perinatal Data
 Collection System, 268-270
place of birth for, 244
Very very low birth weight (VVLBW) in-
fants, body fluid compartments in,
 403-417
 data review, 405-416
 methodology, 403-405
bronchopulmonary dysplasia in, 315-326
 history and definition, 315-319
 long-term outcome, 324
 management of, 320-322
 nutrition, 320
 postdischarge management, 322-324
 supportive care, 320
 ventilator and oxygen supplementation,
 319-320
cost of care of, 461-476
cost-benefit analysis, 474-475
enteral nutrition, 431-432
epidemiologic study of, 233-250
ethical issues in caring for, 477-484
frequency of, 237-238
hemodynamics in, 327-338
 arterial blood pressure, 330-333
 M-mode echocardiogram, 334-337
 neonatal heart rate, 327-330
 transcutaneous oxygen and carbon diox-
 ide measurements, 334
hospitalization length, 465-466
hyperglycemia in, 359-371
 clinical implications of, 361-362
 definition of, 359-360
 etiological factors, 362-363
 incidence of, 360-361
pathogenesis of, 364-368
therapy for, 368-371
hypoglycemia in, 351-359
 clinical implications of, 355
 definition of, 352
 etiological factors, 353-355
 incidence of, 352-353
 pathogenesis of, 355-357
 therapy for, 357-359
less than 500-gm births, 242-244
mortality, literature survey, 453
 survey of centers, 452-455
 and survival, 466-467
Neonatal Mortality Rates, 241-242
nutritional requirements, 432-438
 carbohydrates, 436
 fat, 436
 human milk, 436-438
 protein, 433-435
 vitamins and trace metals, 438
outcome of, 453-459
 environmental influences, 460
parenteral nutrition, 420-431
 calcium and phosphorus, 430
 carbohydrate, 425-426
 cholestasis, 430-431
 goals of, 422
 lipid, 426-430
 protein, 422-425
 vitamins and trace minerals, 430
perinatal factors influencing outcome,
 267-284
amnionitis, 273, 281-282
Apgar scores, 277, 282
birth weight, 280-281
cord prolapse, 271, 281
fetal distress, 275, 282
gastrointestinal disorders, 279, 283
hemorrhage, intracranial and other
sites, 277-279, 282-283
intrauterine growth retardation, 271,
 273-275, 281
mortality rates, 270
neonatal seizures, 277, 283
pre-eclampsia, 273, 282
presentation and mode of delivery, 271,
 275-276, 281
RDS/HMD, 277, 282
renal failure, 279, 283
pulmonary function in, 299-313
 current methods of assessment, 308-
 311
 future considerations, 311
lung compliance, 306-307
lung resistance, 307
past methods of assessment, 300-303
pneumotachography, 303-306
renal function in, 377-401
acid-base homeostasis, 385
aminoglycoside effects, 394-395

and artificial ventilation, 389-390
calcium-phosphate homeostasis, 386-387
and drugs given to mother, 390-391
and drugs given to neonate, 391-394
electrolyte and solute excretion, 387-388
glomerular filtration development, and renal perfusion, 378-382
intrauterine maturation, 377-378
during respiratory distress syndrome, 388-389
syndrome of inappropriate antidiuretic hormone secretion, 390
water and sodium balance, 382-385

resuscitation and respiratory management in, 285-297
assisted ventilation, 288-293
bronchopulmonary dysplasia, 293-294
cardiopulmonary problems, 291-292
delivery room management, 286-288
extrapulmonary complications, 294
lung development, 285-286
pulmonary interstitial emphysema and pneumothorax, 292-293
surfactant therapy, 294-295
surgical problems and outcome in, 445-451

Vitamins, deficiencies in short bowel syndrome, 166-167
placental transfer of, 61
teratogenicity of, 674

therapy in short bowel syndrome, 168
and trace metals in VVLBW infants, nutritional requirements, 438
in parenteral nutrition, 430
Volume expansion, in hypertension, 784
Volume, intravascular, correction of, in septic shock, 747
VVLBW infants. See *Very very low birth weight infants*.

Warfarin anticoagulation, for thromboembolic disease, 731-732
Water and sodium balance, in VVLBW infants, 382-385
Weight(s), fetal, estimation of, 21
measurement of, in nutritional assessment, 123
Wet nursing, 111

X-ray effects on embryo and fetus, 615-648
counseling pregnant woman exposed to radiation, 634-649
exposure from radiation therapy, 639-640
human radiation teratogenesis, 619-628
oncogenic effect of prenatal radiation, 628-634
ovarian and uterine exposure to radiation, 640-642